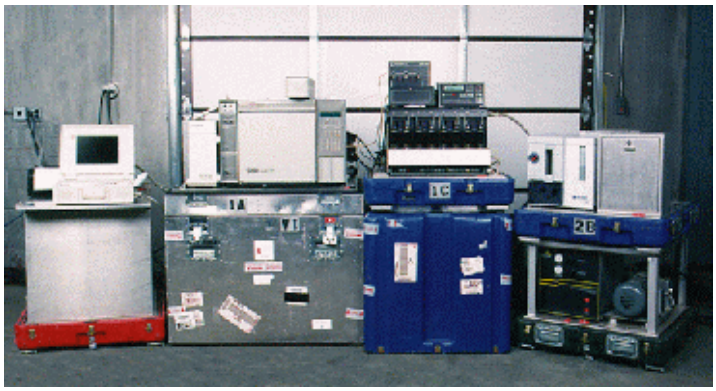
Edgewood Area - Aberdeen Proving Ground, Maryland 21010-5424
U.S. Army Soldier and Biological Chemical Command

Modular Laboratory

The modular laboratory was originally designed to support the multilateral Chemical Weapons Convention, the Bilateral Destruction Agreement, and the Wyoming Memorandum of Understanding. All of these treaties include provisions for sampling and analysis to verify compliance. This created a need for an on-site analytical capability during Chemical Weapons Inspections.



On-site analysis during Chemical Weapons Inspections has unique and demanding requirements. Effective on-site analysis requires laboratory instruments at the inspection site, which could be anywhere in the world, and the laboratory must be self sufficient and fully operable at the site. The on-site capability must maintain the same quality assurance and quality control as permanent laboratory facilities. Essential support equipment, such as electrical generators, pumps, carrier gasses, tools, and manuals, for performing on-site analysis must also arrive at the inspection site and be operable. Inspections conducted under the auspices of chemical weapons treaties are of limited time so another issue integral to the on-site analysis concept is the time and effort needed to ship, unpack, set up, calibrate, and tear down the on-site laboratory.

A series of transportable modules were developed to support these requirements. These modules contain analytical instruments, in this case a Gas Chromatograph/Flame Photometric/Mass Selective Detector, a chemical fume hood, and all the support equipment necessary for the operation and maintenance of those instruments. The modules can accompany the inspection team on passenger aircraft and are designed to minimize connections and on-site laboratory set-up time. The modules also provide work platforms for the instrument in situations where bench space is not provided. This modular laboratory was thoroughly tested by field trials in the United States and Europe.

The results proved the system was functional, effective, and reliable. But the use of these modules is not limited to Chemical Weapons Inspections. They can provide an instant on-site capability in any circumstance where a temporary laboratory is needed and conditions do not support a mobile laboratory. The system is adaptable and can be expanded to include other analytical systems as on-site laboratory needs change.

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